MVCanvas   Version 2.0

(c)1989 by Mike Haaland / Hyper-Tech Software

4341 Gannet Cir Suite 174 / Las Vegas, NV 89013

Phone: (702) 362-5346

Table of Contents

INTRODUCTION & REQUIREMENTS

MVCanvas is a simple to use VEF format graphics editor for use under the OS9 Level 2 Multi-Vue environment. Some of the features include, clip functions, palette switching, multiple font support, digitized picture importing and editing of four different screen resolutions. Print drivers are provided for a wide range of dot matrix printers.

Drawing is done by selecting "tools" from a menu. Then pointing the tool and clicking the mouse button. MVCanvas is totally mouse and menu driven which makes it very easy to learn and use. The "tools" are displayed as Icons and are easily recognizable and quickly remembered. Patterns and Colors are selected the same way.

Multi-Vue is required in order to run MVCanvas. If you do not have Multi-Vue installed on your system, this program will not run. The 'windint' module MUST be in your bootfile in order to perform the high-level windowing this program uses.

If no mouse/joystick is available for use, the "keyboard mouse" may be used instead. While holding the <CTRL> key and pressing <CLEAR> you may toggle the "keyboard mouse" on/off. When using the "keyboard mouse", the arrow keys will be used to move the cursor and the <F1> key will be the mouse button. NOTE: The left arrow will not 'backspace' text in this mode. The keyboard mouse must be toggled off to backspace in 'TEXT' mode.

You must have 136k of memory free when booting MVCanvas or the program will not function properly.

> Required: OS9 Level II Operating System
>   Multi-Vue
>   CoCo 3 512k or 256k
>   One Disk Drive   (Minimum 40 Track Single-Sided)
>
> Recommended: RGB Monitor
>   Mouse/Joystick
>   Hi-Res Joystick adapter
>   Additional Disk or Hard Drive(s)
>   Dot Matrix Printer

NOTE: MVCanvas is supplied on one 40 TRACK SINGLE-SIDED DISK. If your system is set up for 35 track drives, run the ModPatch script on the VEFUtils disk before trying to read the MVCanvas disk. The script is called d0_40trk.scr. This will allow you to access the MVCanvas disk in /D0. First load the modpatch command from your OS9 Level II system disk. Then insert the VEFUtil disk in /D0 and type the following two command lines:

```
chd /d0 [Enter]
modpatch d0_40trk.scr [Enter]
```

This will patch the /D0 device descriptor from 35 Tracks to 40 tracks. for more information on the modpatch utility, please refer to the Commands section of the OS9 Level II manual, page 6-70.

TERMINOLOGY - Used in the manual

Hot Keys   -   Hot keys are keys or combinations of keys that may be
                  pressed to give a 'short cut' to a function in the
                  program. They may be used instead of selecting items
                  from a menu and may be used to answer most dialog boxes.

                  For example:

                  Whenever you encounter a dialog box with a "YES" button,
                  you may press "Y" for yes instead of clicking on the
                  button with the mouse. Any other key will be interpreted
                  as a "NO" answer. Many menu items have 'Hot Keys' that
                  may be pressed at anytime to select the item, even if the
                  the menu is not open.

        NOTE: Hot keys are shown in each section opposite the function
                  they are used to invoke. For a complete list see the
                  Hot Keys section of this manual.

Mouse Terms

    Mouse   -   A mouse, joystick or the "keyboard mouse".

    Click   -   Pressing the mouse button and immediately releasing it.
                       On two button mice, this refers to the left button.

    Double-Click   -   Quickly pressing and releasing the mouse button twice.
                       If MVCanvas doesn't recognize a double-click from you,
                       shorten the interval between clicks.

    Drag   -   Holding down the mouse button and moving the mouse.

    Select   -   To move the mouse cursor over something and click.

File terms

    Extension -   Part of a filename that follows the "." in the filename.
                  For instance: in "picture.vef", ".vef" is the extension.
                  When selecting files in MVCanvas the extension will not
                  be displayed, and need not be typed in for "Save as..."
                  prompts.

    Squash   - Compression technique for the VEF picture format.

    VEF Dir   - This refers to the current data directory. Only VEF
                  pictures in this directory may be opened.

    Clip Dir   - Directory for saving ClipArt. Also reffered to as
                  the 'Scrapbook'.

    ClipBoard
    Device   - The mass storage device used for the 'Disk' clipboard.
                  Only used for temporary storage of Clips. Permanent
                  ClipArt may be stored in the 'Scrapbook'.

MASTER DISK

Before using MVCanvas, make a backup of the original disks that came with the package. (See "Getting Started" chapter 3 in the OS9 Level II manual for how to do this.) NEVER use the MVCanvas disk except to make backup copies. Put a write protect tab on the master disk before you make a copy. This way you will always have the original disk in good condition. After making a backup copy, use this as you working disk, and store the original disk in a safe place.

The MVCanvas disk has six directories on it. They will be used as reference in the documentation. The directories are as follows:

CMDS - executable modules (programs)

CMDS/ICONS - icon.mvcanvas (Sub-directory in CMDS)

PRTDMPS - All printer drivers

SYS - env.mvc, toolbox, stdpats_2.plus, stdpats_4.plus and
    stdpats_16.plus

SYS/FONTS - alternate fonts for MVCanvas

PICS - Aif and sample picture

The second disk is the Utilities Disk. It contains picture utilities to convert many different graphics formats to VEF, a VEF display utility called VEFShow, and a Patch file for the GrfDrv module that will speed up CoCo OS-9 Level II window graphics. For More Details on the Utilities Disk. Please see the Utilities Disk Documentation supplied with this package.

INSTALLATION INFORMATION

File Locations

MVCanvas allows storage of files in almost any directory you choose and can use any mass storage device (Floppy Disk, Hard Drive or RAM disk) for storing the "Disk Clipboard". The following file must be edited if you desire to keep files in a different manner than described in this manual. Here is the contents of the 'env.mvc' file. These may be edited with any text editor to suite your system set-up and needs.

```
* MVCanvas Directory Defaults
* Path to toolbox
TOOLDIR=/DD/SYS
* Path to Clips or Scrapbook
CLIPDIR=/DD/SYS/CLIP
* Path to Fonts
FONTDIR=/DD/SYS/FONTS
* Path to VEF pictures
VEFDIR=/DD/PICS
* Device to store Disk Clipboard
CLIPDEV=/DD
```

MVCanvas, FatBits and CLipUtil must be in the execution directory, usually /DD/CMDS. Also, you must have the 'env.mvc' in either /DD/SYS or in the current working directory. If you want to boot from GShell you must have the icon.mvcanvas in /DD/CMDS/ICONS and the AIF.can in the current data directory. In order to print any files, the correct prtdmp.xxx file must be copied to the execution directory and renamed "prtdmp".

A couple of helpful hints. Get out your OS-9 Level II system disk and take a directory of the SYS directory. See the file 'stdptrs'. Copy it to your SYS directory on your /DD device. From the MVCanvas Master disk, copy all the following files to the same directry (/DD/SYS).

Then edit your 'startup' file and add the following lines:

```
merge /dd/sys/stdptrs >/w
merge /dd/sys/stdpats_2.plus >/w
merge /dd/sys/stdpats_4.plus >/w
merge /dd/sys/stdpats_16.plus >/w
```

Adding these lines will load the Standard Pointers and Patterns into Get/Put buffers upon startup. You will then be able to use patterns while drawing with MVCanvas. The pointers need to be 'merged' also, or you will "lose" you mouse pointer when using any Multi-Vue application.

You must have the 'windint' module in you bootfile in order to run MVCanvas, However, you are not required to boot MVCanvas from the Mulit-Vue environment. You MUST setup the mouse somehow though! A simple method of doing this is to add a line to your startup file and copy the env.file from the SYS directory on your Multi-Vue disk to /DD/SYS. Also copy the command 'control' from the CMDS directory on you Multi-Vue disk to the CMDS directory on your /DD device. Here's the line to add to your startup file:

```
control -e
```

The above line tells the 'control' command to read the 'env.file' in your /DD/SYS directory and set up the mouse, default palette, key repeat, etc.

NOTE: You must have an 'env.file' in /DD/SYS in order to print pictures.

FILES MENU

New (Alt-N)

      Selecting 'New' will prompt 'Are you sure?' if you answer yes the
screen will be cleared. You will have to save the picture by selecting
'Save as ...' from the files menu and then naming it.

Open (Alt-O)

      Open will display all .vef files in the current directory, in a
window. To select a file to load just 'point and click' on the file you
want to load.   The name will be copied to the box at the bottom of the
window. Double-click on the filename or click on 'Open' and the file
selected will load or 'Cancel' to abort.

NOTE: If no files with the extension '.vef' are in the directory, you
will get a dialog box telling you so.

Save (Alt-W)

      This option will save the current picture with the filename that it
was loaded in with.   A Dialog box will ask if an overwrite of the
picture on disk is ok. If 'Open...' wasn't used to load the picture use
'Save As...' to save it.

Save as...

      Will prompt for you to enter a filename, then save the picture.   If
the file already exists on disk, a dialog box will pop up giving the
option to overwrite the existing file.

Print

      Print the picture in the edit buffer. The appropriate print driver
for your type of printer must be the commands directory or the output to
the printer will be garbage. If no print driver is installed, an error
message is shown. SEE 'Set Printer'.

Squash On/Off

      This option turns VEF compression On/Off. It will only affect the
format in which the picture will be 'saved'. Compression will generally
compress a picture by 2/3rds. See FILE FORMAT section for complete file
format.

Set VEF Dir

      Select this option if you wish to change the directory used to save
and load files from. Any legal OS9 path name is accepted.   ie: (..),
(/DD/PICS), (../PICS), etc.   If you don't give a new path name the
current directory will not change.

Set Printer

This will allow you to configure your printer from within MVCanvas. A dialog box will appear asking the path to the print drivers. This is the OS9 pathname of the directory you have all the PtrDmp.xxx files in. After entering the pathname a list of the drivers in that directory will be displayed. Click on a filename to select it. This driver will then be copied to your current execution directory and renamed to "prtdmp". If you wish to abort, click on the "Close Box" icon in the upper left corner of the overlay window.

For more information on the available drivers see the section of the manual entitled "Printer Support".

Shell (S)

Select this option to get an OS-9 shell in a overlay window. Any OS-9 command can be executed from the shell. To exit the shell hold down the <CTRL> key and hit the <Break> key.

About... (Alt-A)

Program version and copyright information.

EDIT MENU

Undo (Alt-Z)

     Selecting 'Undo' will undo the last action you took. In other words
if you draw a line and decide you don't like how the picture now looks
you may click on undo and the picture will be restored.

Cut (Alt-X)

     Cut will place the area selected by a 'grab' (See TOOL MENU for
details) on the Clipboard and 'Cut' it from the picture. The area will
be 'removed' from the screen, much the same as if you used scissors on a
piece of paper. See the FILE FORMAT section for the stored clips.

Copy (Alt-C)

     Selecting this option will Copy the selected area to the Clipboard.
This will not Cut the selected area form the screen but will leave the
screen entact and make a copy of what is selected.

Paste (Alt-P)

On the screen, a box the size of the Clip on the Clipboard will be
drawn. Move the box where you wish to paste the clip and click the
first mouse button. You may 'Undo' a paste.

Clear

     Clears the clipboard and de-selects any selected screen area.

Show

     Display the contents of the clipboard. Click to exit.

The following menu items work on both Selected areas of the screen and
the Clipboard. If an area has been selected, they will act upon the
screen. However, if there is no area selected, they will act upon the
clipboard.

Invert

     Invert - This will change the palettes of the clip as follows:

     For 16 color clips

     Palette   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
     Becomes   15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

     For 4 color clips

     Palette   0 1 2 3
     Becomes   3 2 1 0

Remap

        This will allow you to do a 'Remap' on a clip. (See Remap in the
Goodies menu for details of what Remap does.)

Flip Horizontal

        Flips the clip horizontally.

Flip Vertical

        Flips the clip vertically.

Save As...

        Save the Clip to the 'Scrapbook' (Clip Directory). A dialog box
will appear asking for the name the Clip should be save as. It will be
saved with the extension of '.clp' in the clip directory.

Open Clip

        Will show all the clips in the clip directory. Click on a filename
to select. Double-click on the filename or click on the 'Open' button
to open the clip and place it on the clipboard. Select 'Cancel' to
abort.

RAM Clipboard

        When selected, this item toggles the RAM/Disk storage for the
clipboard. hen set to 'Disk' the clipboard will be stored on the root
directroy of the clipboard device. The default device is specified in
the 'env.mvc' file, under the entry of 'CLPDEV='. As supplied, this
device is /DD. hen in 'Disk' mode, each change or load will cause the
clipboard to be re-saved to disk after any manipulation. (IE: Flips,
Inverts, etc.)

NOTE: The Scrapbook and the Clipboard are not the same thing.   The
clipboard is used to temporarily store the Clip you are working with,
the Scrapbook is where you store permanent pieces of ClipArt. All Cut,
Copy and 'Open Clip' operations will overwrite the data that is stored
on the Clipboard.

GOODIES MENU

Cycle Colors

     This option will do 'palette switching'.   It will rotate eight
palettes giving an animation effect.   It will rotate the top eight
palettes 8 - 15. It puts palette 15 in palette 8, 8 to 9, 9 to 10, etc.
In two color mode the top two palettes will be rotated.

Cycle Speed

     This allows you to select the speed at which the palettes will be
cycled or 'switched'.

Swap Color

     This will allows changing the colors by swapping the palette slot
they are currently in. For example: If palette 0 is Black and palette
15 is white, you may swap the colors. Black would end up in palette 15
and white in palette 0.

Remap Colors

     Remap palette.   This process works on pixels.   It allows you to
change the palette slot of all pixels of one color to another palette
slot.   The pixels will become the color in the 'other' palette slot.
This feature is useful when you want to relocate a group of pixels into
a different palette number. Here's a sample clip of screen wherein each
number or letter represents the pixels. The letter is the color of the
pixel, and the number is the palette slot number of that pixel.   Both
examples are the same clip.

```
            G = green        palette 0
            B = black        palette 1
            R = red          palette 2
            W = white        palette 3

                Color            Palette Numbers

        GGGGGRWRWRWRGGGGG     00000232323200000
        GGGGGRWRWRWRGGGGG     00000232323200000
        GGGGGRWRWRWRGGGGG     0000023232320000
        GGGGGRWRWRWRGGGGG     00000232323200000
```

Say we want all the red pixels to be moved to palette slot 1. Remap
allows you to replace the red pixels with the color in Pallete slot 1.
After the 'remap' the pixels would look like this.

```
                Color            Palette Numbers

        GGGGGBWBWBWBGGGGG     00000131313100000
        GGGGGBWBWBWBGGGGG     00000131313100000
        GGGGGBWBWBWBGGGGG     00000131313100000
        GGGGGBWBWBWBGGGGG     00000131313100000
```

What we've actually done is move the pixels into the other palette slot and not just changed the color of the pixels. A remap of the screen cannot be 'Undone'.

Brush Shape

Allows you to select a brush from a menu of brushes. A pop up menu is opened. It will contain all the available brushes for MVCanvas. Select a brush by moving the mouse pointer over the desired brush and 'Click'.

Set Palette

This option allows you to set the colors you wish to use by selection the intensity of red, green and blue. An overlay window will pop up showing 3 vertical bars labeled at the top as R, G and B. Below them is the current color to be set. Right below that is the available palette slots. The number of colors displayed here will be that maximum available for the screen type you are currently on. You select a color to change by clicking on it, the color will be displayed in the current color box and the R, G and B settings will be displayed in the vertical bars at the top of the window. Clicking in the bars will change the amount of color (Red, Green or Blue) you wish to use to 'mix' the new color. 0 (zero) is none of that color, 3 is the lagrest amount of that color. So if you set all three bars to 0 (zero) you get black and all 3s would give you white. To exit, click on 'Ok' to make the changes 'stick' and 'Cancel' to abort the color changes.

Scroll (Alt-S)

This allows editing of a full 200 vertical pixels. The screen will be scrolled up/down by 16 pixels. The HOT KEY for this menu item is Alt-S.

Restore On/Off

When this item is selected it will flip the restore switch from On to Off or from Off to On. If the switch is turned ON, the screen will be saved after a resolution change. If turned OFF, the screen will be cleared.

RESOLUTION

The following menu items will select screen resolution. The current picture will be lost, unless the 'Restore' switch above is ON. The clipboard however, will be retained. The following are the available resolutions and the HOT KEYS for these Items.

Resolution	Colors	Hot Key
640 x 200	2	Alt-5
320 x 200	4	Alt-6
640 x 200	4	Alt-7
320 x 200	16	Alt-8

TOOLS MENU   (Alt-T)

Selecting Color

    Select the drawing color by clicking on the desired color. It will
then be displayed under the palette box to the right. The box just left
of the current drawing color is the current background color. To change
the background color, click on the foreground color and it is copied to
the background box.

Selecting Pattern

    Patterns are selected the same way as colors are, just point and
click. NOTE: Choose the pattern AFTER the color has been selected! If
a color is selected, the pattern is deselected!

Toolbox

    The box in the right hand corner is the toolbox. Select a tool by
clicking on it, and it will be displayed just underneath the toolbox.
The tools are as follows:

Pal	Pal	Pat	Pat		Text	Grab	Fatbits
0	8	1	9		Line	Eraser	Pencil
1	9	2	10		Rays	Ellipse	Circle
2	10	3	11		SprayCan	Box	Bar
3	11	4	12		Fill	Brush	Stamp
4	12	5	13
5	13	6	14
6	14	7	15
7	15	8	16

    To exit the toolmenu you may, (1) move the mouse pointer off the
menu, or (2) press any key.

Text

    Allows adding text to the screen. When exiting the tool menu, a
single color text cursor will be given. At this point all menus may
still be accessed.   Once the mouse button is pressed, a two color text
cursor will be displayed. This cursor may be dragged anywhere on the
picture in 8 x 8 pixel positions. When the cursor has been positioned
where you want to place text, release the mouse button and it will
change to a normal square cursor. Now simply type. The backspace key
(left arrow) is enabled. After the text has been entered, press the
<ENTER> key and the cursor changes back to the single color text
cursor.

Grab (Alt-G)

    Select a block of graphics to edit or duplicate/store in the
clipboard. A 16 x 16 pixel box is displayed. Move the upper left hand
corner of the box to the upper left corner of the area you want to
select. Press the mouse button and hold it down. Now, by dragging the
mouse down and to the right the box will expand to the desired size in 8
pixel increments. When you have the area to select grabbed releasing
the mouse button will result in selecting the area.

Fatbits (Alt-F)

    Will let you edit a 24 x 24 block pixel by pixel. The cursor will
change to a 24 x 24 pixel square. Move the square over the area you
wish to enlarge. and click. An overlay window will open and the Fatbits
image of the block will be displayed. The palette is located at the
right side and the current drawing color will be displayed at the bottom
of the edit graph. In the upper right corner an "ACTUAL SIZE" display
of the edit block will be shown.

    To edit the block, click on the desired color, then click on the
pixel you wish to change. Several pixels may be changed by holding down
the mouse button and dragging the cursor across them. When done
editing, click on 'Ok' to put your edit back on the main picture. Click
on 'Cancel' at anytime to abort.

    After exiting the 'FatBits Window', you will remain in 'FatBits
Mode' and return to the 24 x 24 square pointer. TO EXIT FATBITS,
double-click when you have this pointer. Single click to select another
block to edit.

NOTE: FatBits is a separate module and must be in the execution
        directory or in memory for this option to function.   It
        may be used as a stand alone program on any graphics
        window. However, keep in mind, it will turn SCALING OFF.

Line

    To draw a line position the mouse cursor to the position the line
will start and press the mouse button, drag the line to where you want
it and release the mouse. Viola! A line!

Erase

    The eraser will change all the pixels under the cursor to the
background color.   This may be used as a square brush also. To use the
eraser simply hold the mouse button down and drag the eraser.   Stop
erasing by releasing the mouse button.

Pencil

    Will allow you to freehand draw on the screen. You may draw by
holding the mouse button down and moving the cursor.

Rays

After selecting rays, press the mouse button at the point where the beginning of the line is desired. Lines will be drawn to anywhere the cursor is dragged to until the mouse button is released.

Ellipse

Position the cursor to the center of the ellipse will be and press the mouse button. The height of the ellipse may be sized by moving the mouse forward or backward, move the mouse right or left to adjust the width. When the right ellipse is achieved, release the mouse button.

Circle

Position the cursor where the center of the circle will be and press the mouse button. You can change the size of the circle by moving the mouse right/left. When you have sized the circle release the button.

SprayCan

Give a Spray painted effect. (See Brush)

Bar

Draws a Bar in the selected drawing color. Position the '+' (cross hair) center at where a corner of the Bar is desired and click the mouse button. Now stretch the Box to the size of the bar to be drawn and click again.

Box

Draws a Box. (See Bar above)

Fill

Fill will change the color of all adjacent pixels that are the same color to the current drawing color. Point the arrow to the area to fill and click the mouse. The fill may take a few moments if a large area is to be filled.

Brush

The Brush allows freehand drawing like the pencil, but with a much bigger point. You may draw by holding the mouse button down and moving the cursor. Release the mouse button to stop drawing. NOTE: After a resolution change you will need to reselect the "Brush Shape" or the brush color may not draw properly.

Stamps

Stamps allows selecting of an area of the screen to use as a stamp. Once a stamp has been selected, move it where you want to put it and press the mouse button, when the area turns a solid color, the 'stamp' has been transfered, release the mouse button. Small stamps work the best. Select an area to use as a stamp, like the Grab function above.

FONT MENU

Font Default

   This is where the name of any font you load will be displayed. When
a font has been opened, the font name will replace the word "Default" in
this menu item. If you decide you would like to use the standard font,
you may click on this item, and the opened font not be used any longer.

Plain

   Plain-text is two colored. It will use the current background and
current foreground colors.   Selecting this will   turn all the other
options below OFF.

Bold

   Makes the font 1 pixel wider than plain text.

Transparent

   Clear or Transparent text will put the letter itself on the   screen
and leave the background alone.   Letter will   show   in the current
foreground color.

Reverse

   Reverse text will make the letter appear in the background color and
the box around it will be the current foreground color.

Underline

   Allows you to type with underlining the text and spaces.

Proportional

   This makes the text 'pleasing to the eye' by leaving only one   blank
pixel between the characters.

Open Font

   This option will allow typing text in a variety of different 8 x 8
fonts. All the fonts in the FONT DIRECTORY (defined in the 'env.mvc'
under the entry of FONTDIR=) will be displayed.   The fonts are in
standard OS9 Level II window font format.   Each font must have the
extension of '.fnt' in order to be recocnized by MVCanvas. Select the
font you want to use by clicking on the font name. Double-click on the
filename or click on the 'Open' button to enable the font.

HOT KEYS

The following is a list of all Hot Keys that may be used in MVCanvas 2.0 Any Dashes (-) in the chart indicates that that column is non-applicable.

Key*	Menu	Item	Description
Alt-A	Files	About...	Version Information
Alt-C	Edit	Copy	Copy from screen to Clipboard
Alt-F	Tools	FatBits	Select 'FatBits Mode'
Alt-G	Tools	Grab	Select area of the screen
Alt-O	Files	Open...	Load a VEF picture
Alt-P	Edit	Paste	Paste from Clipboard to screen
Alt-Q	Close	-	Exit MVCanvas (Top left on MenuBar)
Alt-S	Goodies	Scroll	Scroll picture Up/Down by 16 pixels
Alt-T	Tools	-	Open the Tools Menu
Alt-V	Edit	Paste	Paste from the Clipboard
Alt-W	Files	Save	Write picture to Disk
Alt-X	Edit	Cut	Cut from screen to Clipboard
Alt-Z	Edit	Undo	Undo Last action taken
Alt-5	Goodies	640x200-2	Resolution Change
Alt-6	Goodies	320x200-4	" "
Alt-7	Goodies	640x200-4	" "
Alt-8	Goodies	320x200-16	" "
S	Files	Shell	Open a Shell in an overlay window

In addition to the above list, any dialog box with a 'Yes' button may be answered with a 'Y' for yes and any other key for a 'no'. The tool menu may be closed by pressing any key.

* Individual key or key combination. Alt-A means: Hold down the Alt key and press 'A'. The letter may be in upper or lower case.

PRINTER SUPPORT

    In order for MVCanvas to recognize your printer you need to install
the correct prtdmp program in your execution directory.   See 'Set
Printer' option under the FILES MENU section.   Or simply copy the
apropriate printer driver to your commands directory and rename it to
'prtdmp'.

    The printers drivers available are:

    prtdmp.citoh   - CITOH
    prtdmp.dmp   - Most Tandy DMP printers including 105
    prtdmp.dmpibm - Tandy DMP printers with IBM mode
    prtdmp.dmp105 - Hi-Res Tandy DMP-105
    prtdmp.dmp110 - Tandy DMP-110
    prtdmp.epson   - Epson
    prtdmp.gemini - Gemini
    prtdmp.ibm   - IBM
    prtdmp.star   - Star
    prtdmp.oki   - Okidata

    If your printer is not supported, you may contact Hyper-Tech
Software and we'll see it we can add support for your printer.

NOTE: 'prtdmp' will look for PRPORT entry in the env.file located in
/DD/SYS, this feature is added so custom printer device descriptors may
be used and the descriptor may have any desired name. If no env.file is
found in /DD/SYS the print driver will default to /p.

    The printer dump may also be used from a shell. For example, say we
have a picture called "picture.vef", in order to print it type the
following command at the OS9 prompt:

prtdmp <picture.vef

    This is very handy if you want to get the full benefit of our
multitasking system.   You can save a picture to disk, flip to a
different window, print it from the command line, then flip back to
MVCanvas and not have to wait for the printing to be finished.

    All the printer dumps will handle ANY VEF. By ANY VEF is meant 640 x
200 x 4 color, 320 x 200 x 4 color, 640 x 200 x 2 or 320 x 200 x 16
color Standard or Squashed VEF pictures.

FILE FORMAT

NOTE: "char" below refers to a Byte.

VEF picture format:

A two byte VEF header. Header Values are in Hexadecimal

Standard	Squashed	Screen type	Screen size	Colors
0000	8000	08	320 x 200	16
0001	8001	07	640 x 200	4
0003	8003	06	320 x 200	4
0004	8004	05	640 x 200	2

16 bytes palette information

Picture Data:

If picture is a Standard (UnCompressed) VEF

    Raw data - just put it on the screen

If picture is compressed (Squashed)

char len;	Number of bytes to read and decode to restore 1/2 scan line of screen data. 1/2 scan line is 80 bytes on a type 7 or 8 screen, 40 bytes on types 5 or 6 screen. (40 and 80 are Decimal values)
char count;	compressed/uncompressed byte count

    If data is compressed:

    char data;

        If data is uncompressed:

    char data[count];

    The Header data will only be found once at the beginning of the file.

    Now to decode the Compressed Data. Read the first byte and call it len. It's the length of the compressed 1/2 scan line. Now read 'len' bytes into an array.   All we have to do now is to decode the data we just read into the buffer. Get the first byte in the buffer and see if the high bit is set.   It's our 'count' byte. If the high bit is set it's compressed. Now subtract 128 from our 'count' (clear the high bit) and put the next byte in the buffer 'count' times.

    If the high bit is not set, get the next 'count' bytes from the buffer and put them on the screen.

This continues until you've use 'len' bytes that are in the buffer. When the buffer has been decoded. Read the next 'len' byte from the file and do it again. This will be repeated 400 times in the file.

For compressed data:

	(In Decimal)
char count,	1 to 127 - High bit set - means its compressed
data;	this will be the screen data, put it on the screen 'count' times.

For uncompressed data:

	(In Decimal)
char count,	1 to 127 - Uncompressed number of bytes to follow.
data[count];	

CLIP Format (Aka BUF format)

```
Byte 1  =  STY   -   Screen type
Byte 2  =  HSX   -   High Byte Size X
Byte 3  =  LSX   -   Low  Byte Size X
Byte 4  =  HSY   -   High Byte Size Y
Byte 5  =  LSY   -   Low  Byte Size Y
Byte 6  =  HBL   -   High Byte Length in bytes
Byte 7  =  LBL   -   Low  Byte Length in bytes
Data .......
```

HSX * 256 + LSX is the X size in pixels
HSY * 256 + LSY is the Y size in pixels
HBL * 256 + LBL is the length of the data in bytes

Font Format

Any standard OS9 Level II window font may be used by MVCanvas. So you may create your own using one of the many Public domain font editors available on the electronic services (IE: Compuserve, Delphi, GEnii, etc.) or BBS systems. For information on the file format, please refer to your OS9 Level II manual, windows section, pp. 3-15 and 3-19.

ACKNOWLEDGMENTS

     The author is grateful to all who gave many helpful ideas, hints,
and their time with or without their knowledge. Without the CIS gang,
(CompuServe OS9 Forum members), this program would still be just a "wish
someone would write a..." in my mind. The Forum is a great place to
'hang out', have Q's answered or find out what the latest is in OS9.

Special Thanks to:

     Kevin Darling - for the hours and hours on the phone and many
                     examples. Plus the real neat patch to 'GrfDrv'
                     that speeds up Get/Put buffers.

     Mark Griffith - for all the help with C stuff. And permission
                     to include some of his Fonts.

     Tom Napolitano
     & Bruce Isted - Permission to use routines for the printer dumps.

     James Jones   - Who gave constant encouragement.

     Carl Kreider - Supplying the BEST C library, available in the
                     CIS OS9 Forum.

     Bob Santy   - Permission to include the IPatch utility that
                     allows Kevin's patch above to be applied.

     All those that were involved in Beta-Testing MVCanvas.

NAME

VEFShow - Displays all VEF format pictures

SYNOPSIS

VEFShow [opt] Filename

DESCRIPTION

VEFShow allows viewing of all standard VEF format pictures, including the newer squashed (Compressed) format. Palette switching is also supported. (Only 320 x 200 x 16 color pictures can use the palette switching mode)

While viewing a picture you may use the following keys to control the palette switching.

        Space Bar - Turns Palette switching On/Off
        Up Arrow   - Increase the speed
        Down Arrow - Slow the speed down

Version 2.3 supports both the two screen and three screen 'flicker' pictures. These files are converted GIFs (two screen) and converted IMGs (three screen 4096 colors) from the Rascan Video Digitizer. Although they need not be.

FILENAME CONVENTIONS

The two screen 'flicker' pictures have the same filename except .2 is appended to the second filename like:

vefpic.vef
vefpic.vef.2

The three screen 'flicker' pictures have the character just before the extension changed to 2 and 3. Example:

vefpic.vef
vefpi2.vef
vefpi3.vef

The program will automatically search for these files, if they are found they will be loaded and the screens will be 'flickered'. You may use files of different screen types if you desire. The program will adjust the screen to the file screen type.

EXAMPLES

To view a vef picture:

    VEFShow filename

To view a VEF with palette switching On:

    VEFShow -a filename

NOTE (Flicker)

Flicker is a method of displaying more colors than the 16 max colors per screen by flipping between screens of different pictures rapidly. This allows the CoCo 3 to display 256 colors with two 320 x 200 x 16 colors screens and 4096 false colors using three 640 x 200 x 4 color screens (with dithering)

CAVEATS

The option -a must be the first parameter after the program name on the command line. It may be in lower or uppercase.

NOTE: This option does not need to be specified on the command line in order to do palette switching. It turns the default to ON rather than having to turn it on with the Spacebar.

SEE ALSO

These related files may be found in LIB 10 of the OS9 Forum on CompuServe.

VGIF20.AR   - GIF viewer that will save 256 color pics as two
              320 x 200 x 16 VEFs. (Two screen pictures)

SSMGPB.AR   - Patches to the Dev-Pak CGFX.L Lib

NAME

    UnSqshVEF Vrs 1.1 - Run Length Decoder For all VEF pictures

SYNOPSIS

    UnSqshVEF [Infile] [Outfile]

DESCRIPTION

    Run Length Encoding of VEF format pictures. This method
    of compression will compress the picture by 1/16 to 2/3s
    The picture format will be changed as follows:

    File header:

    int sty;   High bit set signifies a Squashed VEF

                      Type   Standard   Squashed
                      ----   --------   --------
                       8   0x0000   0x8000
                       7   0x0001   0x8001
                       6   0x0003   0x8003
                       5   0x0004   0x8004

    char pals[16];   Palette information

    Picture Data:

    char control;   This byte tells how many bytes to read and
                    decode to restore an 1/2 scan line of data
                    Type 7 and 8 VEFs stored in 80 byte blocks
                    Type 5 and 6 VEFs stored in 40 byte blocks

    For compressed data:

    char count,   1 to 80 - High bit set - means its compressed
                    this will be the number of times the byte was
                    repeated in uncompressed form.
         data;   byte to restore 'count' times

    For uncompressed data:

    char count,   1 to 80 - Number of Uncompressed bytes
                       to follow.
         data[count]; uncompressed data

PARAMETERS

    Infile   = pathname to store the Squashed VEF picture
    Outfile   = pathname to standard VEF picture

SEE ALSO

    VEFSHOW(1) - VEF viewer for standard and compressed pictures
                 Uses Run Length Encoding and palette switching

NAME

    VEFSqsh Vrs 1.1 - Run Length Encoder For all VEF pictures

SYNOPSIS

    VEFSqsh [Infile] [Outfile]

DESCRIPTION

    Run Length Encoding of VEF format pictures. This method
    of compression will compress the picture by 1/16 to 2/3s
    The picture format will be changed as follows:

    File header:

    int sty;   High bit set signifies a Squashed VEF

                      Type   Standard   Squashed
                      ----   --------   --------
                      8   0x0000   0x8000
                      7   0x0001   0x8001
                      6   0x0003   0x8003
                      5   0x0004   0x8004

    char pals[16];   Palette information

    Picture Data:

    char control;   This byte tells how many bytes to read and
                     decode to restore an 1/2 scan line of data
                     Type 7 and 8 VEFs stored in 80 byte blocks
                     Type 5 and 6 VEFs stored in 40 byte blocks

    For compressed data:

    char count,   1 to 80 - High bit set - means its compressed
                     this will be the number of times the byte was
                     repeated in uncompressed form.
         data;   byte to restore 'count' times

    For uncompressed data:

    char count,   1 to 80 - Number of Uncompressed bytes
                     to follow.
         data[count]; uncompressed data

PARAMETERS

    Infile   = pathname to standard VEF picture
    Outfile   = pathname to store the Squashed VEF picture

SEE ALSO

    VEFSHOW(1) - VEF viewer for standard and compressed pictures
                 Uses Run Length Encoding and palette switching

NAME

    CM32VEF - Converts CM3 (CoCo Max 3) pictures to VEF

SYNOPSIS

    CM32VEF <inpath >outpath

PARAMETERS

    <inpath   - CM3 file

    >outpath   - VEF file

DESCRIPTION

    CM32VEF will convert all types of CM3 pictures to VEF
    standard (UnSquashed) format.   The output may be piped
    to a VEF print dump or may be redirected to a file.

    CM32VEF is a filter so all input is from stdin and all
    output is to stdout, error/help messages and progress
    information is written to stderr.

    If the CM3 file is a double screen picture, a file will
    be created in the current working directory with the
    name "cm3_2nd.vef". The first screen will be redirected
    to the path specified on the command line.

BUGS

    None known.

NAME

IMG2VEF - Converts IMG pictures to VEF

SYNOPSIS

IMG2VEF Filename

DESCRIPTION

IMG2VEF will convert all types of IMG pictures to VEF
standard (UnSquashed) format. If the picture to convert
is not in your current working directory, you must give
the full pathname to the picture. The VEF file(s) will
created in your current working directory with the same
filename except the file will have the extension of .vef.
In the case of converting a 4096 IMG file, there will be
three VEFs created. The filenames will be named as:

Example file: vegemite.img

The RED   buffer will have the filename of "vegemite.img".
The GREEN buffer will be named "vegemit2.vef".
The BLUE buffer will be named "vegemit3.vef".

This will allow a VEF viewer to look for the 2nd and 3rd
files, while still allowing single file editing.

BUGS

None known. But it has only been tested on a CoCo 3 w/512k.

NAME

    MGE2VEF - Converts MGE (Color Max) pictures to VEF

SYNOPSIS

    MGE2VEF <inpath >outpath

PARAMETERS

    <inpath   - MGE file

    >outpath   - VEF file

DESCRIPTION

    MGE2VEF will convert all types of MGE pictures to VEF
    standard (UnSquashed) format. The output may be piped
    to a VEF print dump or may be redirected to a file.

    MGE2VEF is a filter so all input is from stdin and all
    output is to stdout, error/help messages and progress
    information is written to stderr.

BUGS

    None known.

NAME

DigiView Version 1.3

SYNOPSIS

DigiView <-opts> [Filename]

DESCRIPTION

This program is a DS-69b, 16 grey level 256 x 256 displayer. It
will also display DS-69 128 x 128 16 grey level pictures. A command
line option -b has been added for viewing in four shades of grey.
Instead of 16 levels of grey 16 colors were used. The colors were
selected with a CM-8 RGB monitor so the colors may look different on
a composite TV Version 1.3 has been updated to use Get/Put Buffer
for faster display and will automatically adjust to both file types
using the getstat call. The background color has been fixed so the
pictures will save properly with Vefio. Also added are the "convert"
to VEF and Hi-Res display options. The VEF file created will be in
Squashed format.

PARAMETERS

Options:

        -b   for 4 scale grey display
        -c   Convert to VEF
        -h   Hi-Res 640 Display (Type 7 screen) Defaults to type 8
        -?   Help and Calling syntax information

If more than one option is used on the command line, they must be
grouped together after the '-' flag with no spaces between them.

Example: DigiView -hc filename

SEE ALSO

VEFSQSH (1)   - Convert Standard VEF to Squashed VEF format
UNSQSHVEF (1) - Convert Squashed VEF to Standard VEF format
VEFSHOW (1)   - VEF display program

NAME

   IPatch

SYNOPSIS

   IPatch patchfile oldfile newfile [-v]

DESCRIPTION

   Creates newfile from oldfile using the changes in patchfile.

PARAMETERS

   "patchfile" the pathname of the file containing the changes
   "oldfile" the pathname of the file to patch.
   "newfile" the pathname of the new version of "oldfile'

Options:

   -v for verbose display of installation

NOTES

   The "patchfile" contains a header, followed by a series of "patch
   entries". The header contains the two 16 bit unsigned values of the
   "oldfile" size and the "newfile" size in bytes respectively. IPatch
   compares the oldfile size with the "oldfile" size, entry. If they do
   not match, IPatch displays the message "   size is incorrect" and
   stops.

   Each entry contains an 8 bit type: 0 for a deletion, 1 for an
   addition, 2 for a same size change, 3 for a disparate size change,
   and 4 for done.

   Following the type byte, are three 16 bit unsigned values
   representing the offset in the oldfile where the patch applies, the
   size of the old area to patch, and the size of the new area
   respectively.

   Following the patch entry are the actual data bytes of the old file
   and the new file areas respectively. IPatch actually compares the
   oldfile area with the bytes in the patch entry and will fail with
   the message: "Old file data mismatch at $xxxx is $xx, should be $xx"
   and stop if they are not the same. IPatch does NOT have a way of
   knowing if there are other differences (i.e. previous patches) in
   the file outside of the range of the entries. WARNING: If other
   differences exist, the resulting program may not run!

   "newfile" is overwritten silently, if it exists, UNIX style.

EXAMPLE

   IPatch fstgrf.ipc grfdrv grfdrv.new

---------- CHRISTMAS 1989 GRFDRV IPATCH ----------

Everyone deserves a present for Christmas, and y'all are no exception
<grin>. Therefore, here's an IPatch file to change the original L-II
Grfdrv module into one that includes the following features:

    * Faster overlays.
    * Faster PUTs on even byte boundaries.
    * Faster screen clears (partial or full).
    * Faster horizontal line drawing.

To apply the patch, use the IPatch utility from Bob Santy (It's included
on the VEFUtils Disk) "ipatch grf.ipc grfdrv grfdrv.new", where grfdrv
is the original from your L-II bootdisk, and the .new version created
will be the one to now place in your CMDS directory as "grfdrv". It'll
take a few minutes to complete the patch, so be patient.

        Header for: GrfDrv
        Module size: $1FFC   #8188   ORIGINAL VERSION
        Module CRC: $E8A1A8 (Good)
        Hdr parity: $18
        Edition: $06   #6
        Ty/La At/Rv: $C1 $81
        System mod, 6809 obj, re-en

        Header for: GrfDrv
        Module size: $1FBB   #8123   CHRISTMAS VERSION
        Module CRC: $3887D3 (Good)
        Hdr parity: $5F
        Edition: $0D   #13
        Ty/La At/Rv: $C1 $81
        System mod, 6809 obj, re-en

If you're using GShell+, use DED to search for and change the following
bytes to take advantage of the increased PUT speed in 80 column mode.
Afterwards, you can even scroll thru CMDS with icons, with little pain.
The offsets shown are true for GShell+ ver 1.24. Ver 1.24a should be
very close, if not the same (everything in hex):

        SEARCHBYTES   OFFSET/1.24   FM   TO   WHAT
        -----------   -----------   --   --   -----------------
        CC005A   022A   5A   58   begin XCord for icons
        8E0006C801   0CD5   06   07   default icons screen type
        8E0006ECF8   0E7E   06   07   new icons screen type
        0042001F   3549   42   40   width of icon columns

        Enjoy! - Kevin Darling, Kent Meyers - 28Dec89